

Marco Ratta

Junior statistical methodologist



Profile

Junior statistical methodologist with expertise in methodological research for clinical trials, with a particular focus on Bayesian methods, group sequential designs, historical borrowing, benefit–risk assessment, surrogate endpoints, and seamless adaptive designs. My research combines theoretical statistical methodology with practical applications in pharmaceutical development and regulatory-oriented decision-making.

Research Interests

Bayesian statistics; clinical trial methodology; adaptive and group sequential designs; survival analysis; historical borrowing; robust mixture priors; benefit–risk assessment; surrogate endpoints; seamless phase II/III designs.

Education

PhD in Statistics

Nov 2022 – Apr 2026

Polytechnic University of Turin, Italy

Funded by Servier

Supervisor: Prof. Mauro Gasparini

Co-supervisors: Donia Skanji (Servier), Prof. Pavel Mozgunov (Saryga and MRC Cambridge), Dr. Gaëlle Saint-Hilary (Saryga)

MSc in Mathematical Engineering

Mar 2020 – Sep 2022

Polytechnic University of Turin, Italy

Final grade: 110/110

BSc in Mathematical Engineering

Oct 2016 – Mar 2020

Polytechnic University of Turin, Italy

Final grade: 103/110

Admission to the “R. Einaudi” College of Merit

Apr 2017 – Jul 2023

Admission to the “Young Talents” Honours Program

Oct 2016 – Mar 2020

Polytechnic University of Turin, Italy

Professional Experience

Junior statistical methodologist Saryga, France	Nov 2025 – Present
Teaching and Academic Assistant in Statistics, Mathematics, and Calculus Polytechnic University of Turin, Italy	2022 – 2025
High School Teacher of Mathematics and Physics Italy	2021
Internship, FCA Automotive Italy 5-month internship	2019
Junior Instructor, Brixiamate National Mathematics Olympiad Training Camps Italy	2018 – 2019

University Teaching Experience

Teaching Assistant, Statistics Polytechnic University of Turin, Italy Undergraduate level (Bachelor's degree), 20 hours each academic year.	Academic Years 2022/2023 and 2023/2024
Teaching Assistant, Mathematical Analysis II Polytechnic University of Turin, Italy Undergraduate level (Bachelor's degree), 20 hours, taught in English.	Academic Year 2023/2024
Teaching Assistant, Statistical Models Polytechnic University of Turin, Italy Graduate level (Master's degree), 30 hours.	Academic Year 2024/2025

Scientific Publications

Peer-Reviewed Publications

- M.Ratta, G.Saint-Hilary, M.Gasparini, and P.Mozgunov, *On the Interplay Between Prior Weight and Variance of the Robustification Component in Robust Mixture Prior Bayesian Dynamic Borrowing Approach*. *Statistics in Medicine* 45 (2026). doi: 10.1002/sim.70616.
- Gasparini M., Di Trani V., Ratta M. *New, shorter small-samples intervals for Vaccine Efficacy*. *Pharmaceutical Statistics* 2 (2026). doi:10.1002/pst.70077.
- Ratta M., Saint-Hilary G., Barboux V., Gasparini M., Skanji D., Mozgunov P. *Dual criterion approach to early conditional approval in time-to-event group sequential trials via historical borrowing*. *Statistics in Medicine*. 1-2 (2026). doi:10.1002/sim.70361.
- Fougerey R.*, Vidot L.*, Ratta M.*, Teng Z., Skanji D., Saint-Hilary G. *Futility interim analysis based on Probability of Success using a surrogate endpoint*. *Pharmaceutical Statistics*, 2024. doi: 10.1002/pst.2410.
*Authors contributed equally.
- Fontan A., Ratta M., Altafini C. *From populations to networks: relating diversity indices and frustration in signed graphs*. *PNAS Nexus*, 2024. doi: 10.1093/pnasnexus/pgae046.

Manuscripts Under Review

- Ratta M., Saint-Hilary G., Teng Z., Gasparini M., Skanji D., Mozgunov P. *Seamless phase II/III design with benefit-risk driven treatment selection*. Under second round of review.

- Ratta M., Mozgunov P., Boulet S., Ursino M. *Bayesian hybrid clinical trials and how to reassess sample size*. Under first round of review.

Conference Presentations

- **PSI Conference**, Belfast, Ireland (2026) — Oral Presentation
- **IBS-IR-EMR 2025**, Salerno, Italy (2025) — Oral Presentation (Invited Speaker)
- **ISCB 45**, Basel, Switzerland (2025) — Oral Presentation
- **Italian Biostatistics Group (IBIG) Forum**, Parma, Italy (2024) — Oral Presentation (Invited Speaker)
- **PSI Conference**, Amsterdam, Netherlands (2024) — Oral Presentation
- **ISCB 44**, Thessaloniki, Greece (2024) — Oral Presentation
- **ISCB 43**, Milan, Italy (2023)
- **Italian Biostatistics Group (IBIG) Forum**, Milan, Italy (2023)
- **Italian Biostatistics Group (IBIG) Forum**, Verona, Italy (2022)

International Experience

- **Costa Rica** 2014 – 2015
One-year intercultural exchange experience with AFS organization.
- **Linköping University, Sweden** 2022
Five-month research stay for the development of the Master's thesis.
- **Institut de Recherches Internationales Servier, Paris, France** During PhD
One-month visiting research period within the PhD project.

Awards and Honors

- First Prize, *Challenge@PoliTo* Artificial Intelligence Competition (2021)
- First Prize, Local Stage of *EBEC* (European BEST Engineering Competition), with admission to the national stage (2021)
- Second Prize, National Stage of *EBEC* (European BEST Engineering Competition) (2021)

Technical Skills

Statistical Methodology: Clinical trial methodology; Bayesian methods; group sequential designs; survival analysis; historical borrowing; benefit–risk assessment; surrogate endpoints; seamless adaptive designs.

Programming:

- R (advanced)
- Python (basic)
- MATLAB (basic)
- C++ (basic)

Languages

- Italian (native)
- English (fluent)
- Spanish (advanced)

Volunteering and Extracurricular Activities

- Amateur clarinet player for 15 years.
- Volunteer with *AFS Intercultura* 2015 – 2016
- Parish youth educator 2012 – 2018